THE MINERAL INDUSTRY OF OMAN

By Philip M. Mobbs

Natural gas and crude oil dominated Oman's economy. Despite the continued decline of national crude oil production, Government hydrocarbon revenues increased slightly in 2003 to about $6.3 billion compared with $5.9 billion in 2002 and $5.2 billion in 2001. Total national crude oil production declined by 8.5% (approximately 28 million barrels) in 2003 compared with 2002, which followed a 6.8% (24-million-barrel) drop in production in 2002 compared with 2001. The potential loss of revenue from the decline in production was offset by an increase in the average price received for Omani oil to $27.84 per barrel in 2003 compared with $24.29 per barrel in 2002 and $23.00 per barrel in 2001. The Government's program to wean the economy from its dependence on crude oil noticeably progressed. Despite the increase in natural gas and oil revenues, nonhydrocarbon revenue advanced to 27.3% of total Government revenue in 2003 compared with 24.4% in 2002. Crude oil revenue decreased to about 70.1% of total Government revenue compared with 73.2% in 2002 and natural gas revenue increased to 2.6% of total Government revenue compared with 2.4% in 2002. Vision 2020, which was the Government's long-term economic plan, projected that natural gas revenues would increase to 10% of Government revenue by 2020, and that crude oil would drop to 9% (Dunkley, 2004; Ministry of National Economy, 2004a§[1]).

In 2003, the Omani gross domestic product (GDP) at current prices was about $21.73 billion,[2] the GDP based on purchasing power parity valuation was about $35.98 billion, and the GDP based on purchasing power parity valuation per capita was reported to be $15,431. The population was estimated to be 2.3 million people, based on preliminary results of the 2003 census (Al-Markazi, 2004; International Monetary Fund, 2004§).

In addition to oil and gas extraction, petroleum refining, and the liquefaction of natural gas, chromium, dimension stone, gold, gypsum, salt, sand and gravel, and silver was mined or quarried in Oman; cement was manufactured; imported copper ore was smelted and refined; and sulfur was recovered as a coproduct of petroleum processing. Mining and quarrying accounted for less than 1% of the GDP.

Government Policies and Programs

In April, a new mining law was promulgated by Royal Decree No. 27/2003. The new law took effect on May 3. The Ministry of Commerce and Industry was charged with developing and issuing associated regulations and rules.

Trade

In 2003, total merchandise exports were valued at $11.7 billion, of which reexports accounted for $1.6 billion. Crude oil, valued at about $7.8 billion, accounted for 77% of merchandise exports; liquefied natural gas (LNG), 14%; petroleum products, 2%; base metals and articles, 1%; and mineral products, 1%. Of the 278.5 million barrels of crude oil that were exported from Oman, China received 27.7%; Japan, 21.8%; Thailand, 18.6%; Republic of Korea, 15.5%; and Malaysia, 4.9% (Ministry of National Economy, 2004b§, c§).

The value of imported mineral products was $479 million and accounted for 7% of total recorded merchandise imports in 2003 (Ministry of National Economy, 2004b§).

Commodity Review

Metals

Aluminum.—In 2003, Government-owned Oman Oil Co. S.A.O.C. and the Abu Dhabi Water and Electricity Authority (ADWEA), which was owned by the Government of the Abu Dhabi Emirate of the United Arab Emirates (UAE), announced that they had completed a study for a proposed 530,000-metric-ton-per-year (t/yr)-capacity aluminum smelter to be built at Sohar. The estimated cost of the project ranged from $2.1 to $2.5 billion. Alcan Inc. of Canada was offered 51% equity interest in the project; Oman Oil and ADWEA proposed to retain 49% interest. Alcan, however, was preoccupied with the acquisition of Pechiney of France. Oman Oil and ADWEA subsequently announced they had commissioned a feasibility study of a smaller 330,000-t/yr capacity smelter (Middle East Economic Digest, 2003a; Khaleej Times, 2003§).

Aluminum product manufacturers in Oman included National Aluminium Products Co. S.A.O.G. (NAPCO) at Rusayl and Shanfari Aluminium Co. at Ruwi. NAPCO announced that it was undertaking a $7 million expansion program to increase aluminum extrusion capacity to 18,000 t/yr from 8,500 t/yr (Newsbriefs.Oman, 2003§).

Copper.—National Mining Co., which was a subsidiary of the MB Group of Oman, continued exploration of the massive sulfide deposits on block 1. The company applied for permits and expected to begin to produce copper concentrate from block 1 in 2004 or 2005. State-owned Oman Mining Co. LLC produced refined copper from imported copper concentrate. Other companies in the

[1]References that include a section mark (§) are found in the Internet References Cited section.

[2]Where necessary, values have been converted from Omani Rials (OR) to U.S. dollars (US$) at the average exchange rate of OR0.384=US$1.00 for 2003, OR0.386=US$1.00 for 2002, and OR0.381=US$1.00 for 2001.

copper sector included Oman Abrasives Co., which produced an abrasive grit from Oman Mining's copper slag; Oman Cables Industry Co., which manufactured copper electrical cables at Rusayl; and Nuhas Oman L.L.C., which made copper bars, rods, tubes, and wire at Rusayl.

Industrial Minerals

Cement.—In July, the Government continued its privatization efforts by offering part of its holding of 60% of the stock of Oman Cement Co. S.A.O.G. on the Muscat Securities Market. Regional demand for cement resulted in Omani cement prices rising to about $55 per metric ton in 2003 from about $49 per metric ton in 2002 (Times of Oman, 2003§).

Nitrogen.—Construction of Oman India Fertiliser Co. S.A.O.C. (OMIFCO)'s 3,500-metric-ton-per-day (t/d)-capacity ammonia and 5,060-t/d-capacity granular urea facility at Sur was expected to be completed in 2005. OMIFCO was a joint venture of Oman Oil (50%), Indian Farmers Fertiliser Cooperative Ltd. of India (25%), and Krishak Bharati Cooperative Ltd. of India (25%). Initial production from the $1 billion plant was expected to start in 2005, and most of the output was assigned to Indian companies under a 15-year take-or-pay contract (Oman Oil Company, S.A.O.C., undated§).

Engro Chemical Pakistan Ltd. completed a feasibility study of its proposed ammonia and urea project at Sohar. A joint venture of Engro Chemical and Oman Oil had planned to move a 1,500-t/d-capacity ammonia plant to Sohar, Oman, from the Netherlands and to build an adjoining 2,600-t/d-capacity urea plant, but contractor's bids on the project were higher than expected. The joint venture reevaluated and subsequently terminated the project (Asian Chemical News, 2003b).

Other nitrogen projects in Oman included Bahwan Trading Co.'s proposed $600 million 2,000-t/d ammonia and 3,500-t/d granular urea plant at Sohar, which was to be operated by the Bahwan Trading subsidiary Sohar International Urea and Chemical Industries, and a proposed 100-t/d-capacity nitrogen plant at Sohar that was to supply the planned Sohar crude oil refinery (Middle East Economic Digest, 2003c; Middle East North Africa Financial Network, Inc., 2002§).

Mineral Fuels and Related Materials

Methanol.—In December, Oman Methanol Co. was formed by Oman Methanol Holding Co., which was a subsidiary of the Omzest Group of Oman (50%), Methanol Holdings (Trinidad) Ltd. of Trinidad and Tobago (30%), and Ferrostaal AG of Germany (20%). Oman Methanol proposed to build a 2,500- to 3,000-t/d-capacity methanol plant at Sohar. Originally, Ferrostaal, Oman Oil, and Omzest had planned to build a 5,000-t/d-capacity methanol plant, but Oman Oil withdrew from the venture in November, and the project was restructured with a smaller initial design capacity, allowance for a future capacity expansion of the project to 5,000 t/d, and the addition of new partner Methanol Holdings (Asian Chemical News, 2003a; Middle East Economic Digest, 2004).

Natural Gas.—Petroleum Development Oman LLC (PDO), which was a joint venture of the Government (60% equity interest), Royal Dutch/Shell Group of the Netherlands and the United Kingdom (34%), Total S.A. of France (4%), and Partex Oil & Gas Corp. of Portugal (2%), increased the Government gas plant's capacity to 23 million cubic meters per day with the installation of a new compressor. Construction started on the Saih Nihayda gas plant that was designed to process 20 million cubic meters per day of natural gas to remove condensate and water from the gas stream. In 2003, PDO drilled four gas exploration wells and added to company reserves 23.5 billion cubic meters of natural gas and 86.2 million barrels of condensate in the Burhaan West Field extension and the Fakhr Field. PDO also announced a proposed 5-year $2 billion gas-infrastructure investment program (Times of Oman, 2002§; Rigzone.com, 2003§; Petroleum Development Oman LLC, 2004a§, b§).

In 2002, the unitized venture of Novus Petroleum Ltd. of Australia (40%), Atlantis Holding Norway A/S (25%), LG International Corp. of the Republic of Korea (25%), and Eagle Energy (Oman) Ltd., which was a subsidiary of Heritage Oil Corp. of Canada (10%), drilled the Tibat-1 wildcat well across the boundary of blocks 8 and 17. Novus proceeded with field development planning, but drill-stem testing of the Tibat-1 gas discovery revealed that the gas contained high amounts of nitrogen and that additional processing facilities would be needed to develop the field for commercial production. During 2003, Novus processed three-dimensional (3D) seismic data that had been acquired over the Omani sector of the offshore Hengam (Iran)/West Bukha (Oman) Field that straddled the Iran-Oman maritime border, and two-dimensional (2D) seismic data on blocks 15, 31, and 47.

In 2003, Novus also renovated the single-point-mooring system that was used to offload condensate from storage on the production platform on its offshore Bukha Field on block 8, completed rehabilitation work on the Bukha platform's liquefied petroleum gas (LPG) extraction plant, and started a gas compression project at the onshore terminal for the gas pipeline. PT Medco Energi Internasional Tbk of Indonesia proposed to acquire Novus in December.

In February, China National Chemicals Import & Export Corp. (Sincochem), which was a Chinese Government-owned enterprise, completed the acquisition of Atlantis from Petroleum Geo-Services ASA of Norway. Atlantis, which held 50% interest in block 17 where Novus drilled the Tibat-1, farmed out one-half of its interest in block 40 to Electro Silica Oil and Gas Ltd., which was a subsidiary of Electro Silica plc of the United Kingdom. Atlantis drilled an exploration well on a gas prospect on block 40 in September.

Occidental Petroleum Corp. of the United States (Oxy) and Mitsu E&P Middle East BV, which was a subsidiary of Mitsu Oil Exploration Co. of Japan, formed the Northern Oman Gas Joint Venture, which agreed to sell to the Government about 3.4 million cubic meters per day of natural gas from associated gas-producing zones and previously stranded nonassociated gas reservoirs on block 9 (Occidental Petroleum Corp., 2004, p. 11).

At yearend 2003, the Government-owned Oman Gas Co.'s 700-kilometer (km) Salalah and 300-km Fahud-Sohar pipelines were awaiting commissioning. Construction of a 45-km pipeline spur that would couple the Fahud-Sohar gas pipeline at Mahdha, Oman, to Al Ain, UAE, was nearly complete. The spur would supply natural gas to Dolphin Energy Ltd. in the UAE for 3 years, until Dolphin's pipeline to Qatar was completed. The pipeline spur was designed to be able to reverse the gas flow direction.

The Government formed Qalhat LNG Co. S.A.O.C. (QLNG) to own and operate the proposed third LNG train at Qalhat. QLNG would be owned by the Government (55.84% equity interest), Oman Liquefied Natural Gas LLC (36.8%), and Union Fenosa S.A. of Spain (7.36%).

Oil.—PDO's production from about 117 gasfields and oilfields accounted for most of Oman's hydrocarbon output. Much of the drop in crude oil production was attributed to production declines at PDO's older fields in the west-central section of the country. To counter the continued production decline, PDO had significant artificial lift and water flood programs in place, which resulted in a higher production costs in Oman compared with many of the other countries in the Persian Gulf region. Oil lifted by beam pumping accounted for 38% of PDO's output; electrical submersible pumps, 30%; gas lift, 23%; and progressing cavity pumps, 4%. Flowing wells accounted for only 5% of production in 2003 compared with 1992 when gas lift accounted for 68% of the production; pumping, 22%; and flowing wells, 10%. Under a proposed expansion of the water flood program, PDO would inject about 4.4 million barrels per day of water into producing reservoirs. PDO also had started enhanced oil recovery programs, such as the steam injection program on the Mukhaizna Field that began in 2003. The program required PDO to drill an additional 1,800 to 2,200 wells in the field; initial enhanced production was expected to begin in 2007. Also in 2003, PDO evaluated the results of a 2002 trial steam-injection program at the Qarn Alam Field, initiated 7 seismic surveys, and drilled 10 oil-exploration wells. A total of 35.4 million barrels was added to reserves (Al-Hinai, 2003; Gavin, 2003; Petroleum Development Oman LLC, 2004a§, b§).

The contract for a $3.4 million automated gas-oil separation plant for the Barik Gharif Field was awarded by PDO to Emerson Process Management, which was a subsidiary of Emerson Electric Co. of the United States.

Oxy (65% equity interest) and Mitsu (35%) produced about 18,500 barrels per day (bbl/d) of oil from block 9, primarily from the Safah Field. Oxy continued exploration of block 27 and sold 35% interest in the block to Mitsu (Occidental Petroleum Corp., 2004, p. 11).

In 2003, EnCana International Oman, which was a subsidiary of EnCana Corp. of Canada, signed a 3-year production-sharing agreement and began exploration on blocks 3 and 4. Also in 2003, Rees Oil & Gas Services LLC of Oman and BGP International of China [a subsidiary of China National Petroleum Corp. (CNPC)] formed BGP Oil & Gas Services LLC. BGP Oil & Gas acquired 3D seismic data across block 5 for Daleel Petroleum Co., which was a joint venture of Mazoon Petrogas S.A.O.C. (a subsidiary of the MB Group of Oman) and Mazoon Petrogas BVI Ltd. (an indirect subsidiary of CNPC). Daleel Petroleum had acquired block 5 and the Daleel Field from Japex Oman Co. in 2002.

Spectrum Energy and Information Technology Ltd. of the United Kingdom won a 6-year Government seismic-data contract for work along the Arabian Sea coastline. Spectrum was to reprocess 6,000 km of existing 2D seismic data and acquire and process an additional 12,000 km of seismic, gravity, and magnetic data along the southwest coast.

In 2003, Sohar Refinery Co., which was a subsidiary of Oman Refinery Co. LLC, awarded the construction contract for the proposed 116,000-bbl/d crude oil refinery at Sohar. The construction was expected to take 3 years (Middle East Economic Digest, 2003b).

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TABLE 1

OMAN: PRODUCTION OF MINERAL COMMODITIES [1]

(Metric tons unless otherwise specified)

Commodity[2]		1999	2000	2001	2002	2003[e]
Cement, hydraulic		1,217,000	1,238,063	1,369,570	1,400,000 [e]	1,400,000
Chromium, gross weight		26,004	15,110	30,150	27,444 [3]	28,000
Copper, metal:						
Smelter		16,818	23,790	24,220	24,000 [e]	17,000
Refinery		17,171	24,281	24,000 [e]	24,000 [e]	17,000
Gas, natural:						
Gross	million cubic meters	11,567	15,496	19,268	22,366	21,000
Dry	do.	8,056	12,020	14,000	14,800 [e]	14,000
Gold	kilograms	597	551	603	188 [e]	4
Gypsum		180,129	131,909	44,323	55,722	50,000
Natural gas liquids[e]	thousand 42-gallon barrels	6,000	6,000	6,000	6,000	6,000
Petroleum:						
Crude[e]	do.	328,100 [3]	353,000	352,000	328,000	300,000
Refinery products:						
Liquefied petroleum gas	do.	423	350 [e]	366	545 [e]	550
Gasoline	do.	4,711	4,857	4,198	5,428	5,400
Jet fuel and kerosene	do.	1,457	1,643	1,489	2,008	2,000
Distillate fuel oil	do.	6,297	6,363	5,338	6,658	6,700
Residual fuel oil	do.	14,900	14,797	11,980	14,942	15,000
Other	do.	908	638	666	1,048	1,000
Total	do.	28,696	28,648	24,037	30,629	30,700
Salt		NA	11,700	13,983	14,410	15,000
Sand and gravel		15,681,951	22,448,254	25,967,815	21,736,414	22,000,000
Silver	kilograms	3,366	4,894	3,153	38	--
Stone:						
Marble		188,545	147,686	157,249	135,930	140,000
Other		3,813,821	3,537,216	3,395,589	3,182,522	3,200,000
Sulfur[e]		30,000	30,000	30,000	30,000	30,000

[e]Estimated; estimated data are rounded to no more than three significant digits and may not add to totals shown. NA Not Available. -- Zero.

[1]Table includes data available through October 2004.

[2]In addition to the commodities listed, clay for bricks and tile was produced and steel scrap melted, but available information is inadequate to make estimates of output levels.

[3]Reported figure.